

REMARKS / ARGUMENTS

Status of Claims

Claims 1-13 and 16-47 are pending in the application. Claims 1-13, 46 and 47 stand rejected. Claim 47 is objected to due to informalities. Applicant has amended Claims 1, 11, 13 and 46, cancelled Claims 9-10 and 14-45, leaving Claims 1-8, 11-13, 46 and 47 for consideration upon entry of the present Amendment.

Applicant respectfully submits that the rejections under non-statutory double patenting and 35 U.S.C. §103(a) have been traversed, that no new matter has been entered, and that the application is in condition for allowance.

Rejections Under 35 U.S.C. §103(a)

Claims 1-13 and 46-47 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Keidar et al. (U.S. Patent 6650927, hereinafter “Keidar”) in view of Subramanyan et al. (U.S. Patent 6782284, hereinafter “Subramanyan”), Chen et al. (WO 96/10949, hereinafter “Chen”) and Vesely.

The Examiner finds that it would be obvious to one of ordinary skill in the art at the time the invention was made to have used the combined system of Keidar, Subramanyan and Chen for location and navigation of an interventional tool as taught by Vesely.

Applicant traverses these rejections for the following reasons.

Applicant respectfully submits that the obviousness rejection based on the References is improper as the References fail to teach or suggest each and every element of the instant invention in such a manner as to perform as the claimed invention performs. For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a prima facie case of obviousness. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed.

Cir. 1988). The Examiner must meet the burden of establishing that all elements of the invention are taught or suggested in the prior art. MPEP §2143.03.

Dependent claims inherit all of the limitations of the respective parent claim and any intervening claim.

As a preliminary matter, in the office action, the Examiner stated that one could not attack individual references to show nonobviousness. [*paper 20080128*, page 6, citing *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981)]. Applicant concurs and respectfully submits that Applicant did not attack the individual references. In the office action dated June 26, 2008, the Examiner relied upon certain references to provide what the Examiner believed to teach the claimed limitations. Applicants submit that to the extent that Applicants discuss a particular reference, either in the prior responses or in the present Amendment, it is because the Applicant's disagree with the Examiner's interpretation and statements regarding that reference. Applicant's submit that where a reference fails to disclose, teach or suggest the claimed element, then absent disclosure of such limitations in another cited reference, the proposed combination will fail teach or suggest each and every element of the instant invention in such a manner as to perform as the claimed invention performs and the prima facie case of obvious is not been established.

Applicant submits that Claim 1 is not obvious in light of the proposed combination of Keidar, Subramanyan, Chen and Vesely. Claim 1 includes the limitations of cardiac image data that has been stored in a database and the image is viewable in at least one of a bi-ventricular pacing, atrial fibrillation and atrial flutter planning procedure. Applicant submits that since the image is used in a planning procedure, then the image data must have been pre-acquired. Therefore 3D images can be used to register and subsequently navigate the tools to the desired locations rather than being limited to the pathway over which the tool has traveled as taught by Vesely. Accordingly, Applicant respectfully submits that claimed combination of Claim 1 provides a synergistic effect that is not disclosed, taught, or suggested by the prior art.

Further, independent Claim 1 includes the limitation that the post-processing system is adapted to display a geometric marker at an anatomical landmark. In the final office action, the Examiner stated that the transducer taught by Vesely is an anatomical landmark. [paper 20090112, page 4]. Applicant respectfully disagrees. The transducer is a foreign object inserted into a person's body. The term anatomical in contrast refers to a structural makeup of the patient or the patient's parts. [See "anatomy," Merriam-Webster Online Dictionary. 2009. Merriam-Webster Online. 17 February 2009 <<http://www.merriam-webster.com/dictionary/anatomy>>]. Applicant respectfully submits that the argument put forth by the Examiner that a transducer is an anatomical structure is contrary to the well known and accepted usage of the term "anatomical".

Applicant further submits that Keidar, Subramanyan, and Chen fail to cure this deficiency and therefore the proposed combination would fail to operate in the same manner as the claimed invention. Accordingly, Applicants respectfully submit that independent Claim 1 is not obvious in view of Keidar, in light of Subramanyan, Chen and Vesely.

In a previous amendment dated 17 December 2008, Applicant asserted that Vesely describes a real time ultrasound technique. In this technique sound waves are used to track real time location of cardiac needles, probes catheters etc. Vesely also discloses that transducers are energized to yield signal with respect to the field of view, and no fixation with anatomical landmarks. Applicant submits that utilization of reference locations taught by Vesely are at a greater distance from the points of interest which could introduce variability and motion if the reference points are relocated relative to the interventional tool. Therefore, the operator is limited to being able to acquire/reference/visualize only that anatomical pathway over which the tool has traveled. Thus the actual patient vascular opening and dimensions may be lost and can result in false security for the operator, meaning that if the actual vessel is in a different location, interventional activities will be performed at suboptimal locations.

In the office action, the Examiner focused on the Applicant's use of the word

“could” to argue that such a proposed combination is an imaginary scenario. [*paper 20090112*, page 5]. Applicant respectfully disagrees with the Examiner’s assertion. The use of the term “could” in this context means that in some cases the points of interest would move, which increases variability and motion. The term “could” in this context refers to “variability” and is not inferring a possible situation. Applicant submits that the transducers are not part of the patient’s body and therefore not a fixed structure like an anatomical structure of the patient’s body. The complexity of the human body, and its reaction to foreign bodies, the transducers would move over time. As such, one of ordinary skill in the art would not want to rely upon such devices as landmarks in the procedure planning system of Claim 11 due to the variability they would induce. This variability is not an issue in the device taught by Vesely because the Vesely device is used in real-time, not as a procedure planning system.

Applicant submits that common sense would steer a person of ordinary skill in the art away from such usage and reliance, not toward it. Accordingly, Applicant submits that the Applicant’s use of the term “could” in this context was used to show unpredictability and variability that would be introduced by the proposed combination of Keidar, Subramanyan, Chen and Vesely. Therefore, Applicant respectfully submits that the proposed combination of Keidar, Subramanyan, Chen and Vesely fails to teach or suggest each and every element of the instant invention in such a manner as to perform as the claimed invention performs.

Applicant respectfully submits that combination of Keidar, Subramanyan and Chen and Vesely fail to teach or suggest each and every element of the instant invention in such a manner as to perform as the claimed invention performs. Accordingly, reconsideration and withdrawal of this rejection is respectfully requested.

With respect to dependent Claims 2-8 which depend directly or indirectly from independent Claim 1 and also incorporate all of the limitations of the parent claim. As such, for at least the reasons set forth above, Applicant submits that Claims 2-8 are not

obvious view of Keidar, in light of Subramanyan, Chen and Vesely. Reconsideration and withdrawal of this rejection is respectfully requested.

With respect to dependent Claim 13, which depends from independent Claim 1 and therefore incorporates all of the limitations of Claim 1. Accordingly, for at least the reasons set forth above with respect to Claim 1, Applicants submit that dependent Claim 13 is not obvious in view of Keidar, in light of Subramanyan, Chen and Vesely. Further, Applicants submit that Claim 13 also includes limitations not found in the prior art. Claim 13 includes the limitation that the post-processing systems displays a first image of at least one of the heart, coronary sinus, left ventricle, left atrium, and right atrium in one of a translucent fashion and an opaque fashion while a second image of the coronary sinus is displayed in one of the translucent fashion and opaque fashion opposite the first image. A careful review of the references finds no disclosure, teaching or suggestion of such a limitation. Applicant further submits that the Examiner has not provided a citation to such a limitation nor provided any reasons or arguments based on the cited references as to why such a limitation would be obvious in view of the cited references. Accordingly, Applicants respectfully submit that a prima facie case of obvious has not been established and that none of the references teach or suggest each and every element of the instant invention in such a manner as to perform as the claimed invention performs. Accordingly, Applicants respectfully submit that dependent Claim 13 is not obvious in view of Keidar, in light of Subramanyan, Chen and Vesely.

Applicant respectfully submits that independent Claim 11 is not obvious in view of Keidar, in light of Subramanyan, Chen and Vesely. As with Claim 1, Claim 11 includes the limitations of a cardiac image data that has been stored in a database and the image is viewable in at least one of a bi-ventricular pacing, atrial fibrillation and atrial flutter planning procedure and that that the post-processing system is adapted to display a geometric marker at an anatomical landmark. Therefore, Applicants submit that for the

reasons set forth above with respect to independent Claim 1, that Claim 11 is not obvious in view of the proposed combination of Keidar, in light of Subramanyan, Chen and Vesely.

With respect to dependent Claim 12, which depends from independent Claim 11 and therefore incorporates all of the limitations of Claim 11. Accordingly, for at least the reasons set forth above with respect to Claim 11, Applicants submit that dependent Claim 12 is not obvious in view of Keidar, in light of Subramanyan, Chen and Vesely. Applicant further submits that Claim 12 also includes limitations not found in the prior art. Claim 12 includes the limitation that the coronary sinus is displayed in a translucent fashion and the geometric landmark in an opaque fashion. A careful review of the references finds no disclosure, teaching or suggestion of such a limitation. Applicant further submits that the Examiner has not provided a citation to such a limitation nor provided any reasons or arguments based on the cited references as to why such a limitation would be obvious in view of the cited references. Accordingly, Applicants respectfully submit that a prima facie case of obvious has not been established and that none of the references teach or suggest each and every element of the instant invention in such a manner as to perform as the claimed invention performs. Accordingly, Applicants respectfully submit that dependent Claim 12 is not obvious in view of Keidar, in light of Subramanyan, Chen and Vesely.

With respect to independent Claim 46, which has been amended to include all of the limitations of Claim 1, also includes the limitation that the post-processing system inserts geometric markers into a 3D model at corresponding anatomical landmarks. For the same reasons set forth above with respect to Claim 1, Applicants respectfully submit that none of the references teach or suggest each and every element of the instant invention in such a manner as to perform as the claimed invention performs. Accordingly, Applicants respectfully submit that independent Claim 46 is not obvious in view of Keidar, in light of Subramanyan, Chen and Vesely.

In addition to the foregoing, Applicant finds no motivation or teaching in any of the References to modify a primary Reference in view of its respective secondary Reference to arrive at the claimed arrangement of elements without disturbing the accuracy characteristics of the three dimensional models of the actual patient for use in planning and intended purpose of the art being modified.

In view of the foregoing, Applicant submits that the References fail to teach or suggest each and every element of the claimed invention and are therefore wholly inadequate in their teaching of the claimed invention as a whole, fail to motivate one skilled in the art to do what the patent Applicant has done, fail to recognize a problem recognized and solved only by the present invention, fail to offer any reasonable expectation of success in combining the References to perform as the claimed invention performs, fail to teach a modification to prior art that does not render the prior art being modified unsatisfactory for its intended purpose, and discloses a substantially different invention from the claimed invention, and therefore cannot properly be used to establish a prima facie case of obviousness. Accordingly, Applicant respectfully requests reconsideration and withdrawal of all rejections under 35 U.S.C. §103(a), which Applicant considers to be traversed.

In light of the foregoing, Applicant respectfully submits that the Examiner's rejections under 35 U.S.C. §103(a), have been traversed, and respectfully requests that the Examiner reconsider and withdraw these rejections.

If a communication with Applicant's Attorneys would assist in advancing this case to allowance, the Examiner is cordially invited to contact the undersigned so that any such issues may be promptly resolved.

The Commissioner is hereby authorized to charge any additional fees that may be required for this amendment, or credit any overpayment, to Deposit Account No. 07-0845.

In the event that an extension of time is required, or may be required in addition to that requested in a petition for extension of time, the Commissioner is requested to grant a petition for that extension of time that is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to the above-identified Deposit Account.

Respectfully submitted,

CANTOR COLBURN LLP

Applicant's Attorneys

By: /D. S. Christensen Reg. No. 40955/

Dave S. Christensen
Registration No: 40,955
Customer No. 23413

Address: 20 Church Street, 22nd Floor, Hartford, CT 06103-3207
Telephone: (860) 286-2929
Fax: (860) 286-0115